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Status of Forms Described or Recorded by J. A. Allen in "The American Museum Congo Expedition Collection of Bats"

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INTRODUCTION

In 1917, J. A. Allen, H. Lang, and J. P. Chapin published an important paper on the bats collected by the American Museum Congo Expedition. This collection of bats was apparently the first really important one made in the former Belgian Congo,[2] even though most of it was limited to the northeastern part of the country. Part I of the paper, the "Systematic List," was written by J. A. Allen alone. In this account he listed 68 forms, three of which he described as new subspecies and 23 as new species. He also described two new subgenera. In the nearly 50 years which have elapsed since this publication, many additional specimens of bats have been collected in the Congo (see especially Schouteden, 1947), and considerable taxonomic work has been done on many of the genera involved. As a result of this work, some of the forms described by Allen have been recorded from other localities, and a few have been synonymized. A number of forms named for the first time by Allen, however, have not been recorded by later writers.

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[2] Throughout the present paper, the name "Congo" refers to the former Belgian Congo, unless otherwise stated.

Since I have studied all the types and most of the remaining material mentioned by Allen in connection with a forthcoming paper on the bats of the Sudan, it seemed desirable to make a reassessment of Allen's identifications and to relate this material to other specimens collected in the former Belgian Congo (not including Ruanda-Urundi). In this connection, I have looked at much hitherto unreported material at the American Museum of Natural History. I list additional species of Congo bats in the American Museum which are not represented in the Lang-Chapin collection. The specimens are discussed under the names by which they were identified by Allen.

This study was greatly facilitated by National Science Foundation Grant GB-1391 which enabled me to visit the British Museum (Natural History) in London, the Corynden Museum in Nairobi, and the National Museum in Bulawayo. I wish to thank the staffs of these institutions, particularly Mr. R. W. Hayman, Mr. J. E. Hill, and Miss Jean Ingles at the British Museum, Mr. John Williams of the Corynden Museum, and Mr. Graham Child of the National Museum. I wish to thank, also, Miss Barbara Lawrence of the Museum of Comparative Zoölogy at Harvard College for the loan of specimens. I had the benefit of stimulating conversations on many taxonomic problems from Dr. David Harrison in England and Mr. Frank Ansell in Rhodesia.

1. *Eidolon helvum*

Allen correctly recorded this species from Avakubi and Medje, both in Oriental Province. One of the commoner species, it has been collected at numerous localities in the Congo. The American Museum has additional specimens from Lukolela and Lake Tumba in Equator Province; New Beni, Katana, Kakonda, and Lwiro in Kivu Province; Luluabourg in Kasai Province. Schouteden (1947) recorded the species from many localities in the Congo.

2. *Epomops franqueti franqueti*

Allen correctly identified this form from Avakubi, Medje, Niangara, Niapu, Stanleyville, and Vankerckhovenville in Oriental Province, also from Leopoldville in Leopoldville Province. The American Museum also has specimens from Lukolela and Mistandunga in Equator Province. Schouteden (1947) recorded the species from a number of localities.

3. *Hypsignathus monstrosus*

Allen correctly identified this species, recording it from Avakubi, Bafwabaka, Penge, and Stanleyville in Oriental Province. The American Museum also has specimens from Lukolela and Mbali (Lake Tumba) in Equator Province and from New Beni in Kivu Province. Schouteden (1947) listed the species from many localities.

4. *Epomophorus anurus*

This species was recorded correctly from Faradje in Oriental Province. The American Museum also has specimens from Kisenyi, Lueba (northwestern shore of Lake Tanganyika), and Rutschuru, all in Kivu Province. Schouteden (1947) recorded the species from several localities, all from the eastern edge of the Congo.

5. *Epomophorus wahlbergi haldemani*

Allen recorded a single specimen, correctly identified, from Cape Lopez, which, as his map clearly shows, is not in the Belgian Congo but in Gabon. The American Museum, however, also has a series from Luluabourg in Kasai Province. Schouteden (1947) recorded it from several localities.

6. *Micropteropus pusillus*

A single specimen of this species was correctly identified by Allen from Niangara in Oriental Province. The American Museum also has specimens from Lukolela in Equator Province, Luluabourg in Kasai Province, and Gandi Sunde (Mayombe district) in Leopoldville Province. Schouteden (1947) recorded this form from a number of localities.

7. *Casinycteris argynnis*

Allen correctly identified one specimen of this rare bat from Medje in Oriental Province. This is the only individual in the American Museum collection. Schouteden (1947) has recorded it from two other localities in Oriental Province, as well as from Beni in Kivu Province. The species seems otherwise known only from its type locality in Cameroon.

8. *Myonycteris wroughtoni*

Allen correctly identified this species from Medje. There are no other specimens in the American Museum. Apparently the only other records of this rare bat other than the type locality are those given by Verschuren (1957) for the Garamba National Park. All these localities are in Oriental Province.

9. *Taphozous mauritianus*

Specimens of this form were correctly identified by Allen from Avakubi, Faradje, Garamba, Niangara, and Yakuluku, all in Oriental Province. The American Museum also has specimens from Kasenyi (Lake Albert) in Kivu Province and Luluabourg in Kasai Province. Schouteden (1947) recorded this common bat from many localities.

10. *Taphozous sudani*

Allen correctly identified this species from Dungu in Oriental Province. These are the only Congo specimens in the American Museum. Verschuren (1957) summarized the known Congo records, all of which are in the eastern part of the country.

11. *Saccolaimus peli*

Allen recorded this common bat from Avakubi, Bafwabaka, Medje, Ngayu, Niangara, and Rungu, all in Oriental Province. These specimens were correctly identified, but *Saccolaimus* is now usually considered to be a subgenus of *Taphozous* (see Ellerman and Morrison-Scott, 1951). The American Museum has additional specimens of *T. peli* from Irumu in Oriental Province, Lukolela in Equator Province, and Luluabourg in Kasai Province. Schouteden (1947) listed many localities for the species.

12. *Coleura gallarum nilosa*

Allen recorded this form from Aba, Oriental Province. Though correctly identified, I am inclined to consider *nilosa* a subspecies of *C. afra*. *Coleura gallarum* was described by Thomas (1915) from Zeyla in Somalia and was distinguished from *C. afra* by its smaller size. *Coleura g. nilosa*, described by Thomas from Bahr-el-Zeraf, Upper Nile Province, Sudan, was distinguished from *C. g. gallarum* on the basis of color. Actually,

as seen by examination of a number of specimens from the Sudan, Somalia, Kenya, and Tanganyika, as well as the Congo, there is considerable individual variation in both size and color. While I have seen little material from near the type locality of *C. afra* (Tette in Mozambique), the forearm measurements from more nothern localities overlap broadly Thomas' and my measurements of cotypes. There is also some overlap in skull measurements. While the precise status of the three described forms is not entirely clear, it seems virtually certain that only a single species is involved. It should also be noted that specimens from Kenya and Tanganyika, although in general identified as *afra*, are actually more or less intermediate in size between *afra* and *gallarum*. I am therefore inclined to consider the three named forms as subspecies of *C. afra*, though actually a cline may be involved. The form in the northeastern Congo would then stand as *Coleura afra nilosa*. The American Museum has no other Congo specimens of *Coleura*. I know of only two other definite records from the Congo, both under the name of *C. afra*. These are Schouteden's (1947) from Kodja and Hayman's (1954) from Mt. Wago (Blukwa, Ituri), both in Oriental Province.

13. *Nycteris hispida*

Allen recorded this species from Avakubi, Medje, and Stanleyville in Oriental Province and from Boma in Leopoldville Province. These specimens are certainly correctly identified to species. In the absence of material from Senegal (the type locality of *hispida*), however, the subspecific status of these specimens is in doubt. The American Museum also has specimens from Irumu and Kasenyi on Lake Albert, both in Oriental Province, and from Luluabourg in Kasai Province. Schouteden (1947) listed numerous Congo records.

14. *Nycteris pallida*

Allen described this form as new, basing it on specimens from Faradje and Vankerckhovenville, both in the northern savanna portion of Oriental Province. It was distinguished from *N. hispida* by its paler coloration and smaller size At the time Allen described *pallida*, the only dry skins of *hispida* in the American Museum were those from Avakubi, Medje, and Stanleyville in the forest zone to the south of the two *pallida* localities. There is no doubt that the characters Allen used do hold on the skins he had. However, it is also evident that the characters do not hold throughout the range of *N. hispida*. Both Braestrup (1935) and

Verschuren (1957) agreed that *pallida* was conspecific with *hispida.* Whether *pallida* is a synonym (Verschuren) or a subspecies (Braestrup) can be determined only when topotypical material of *hispida* from Senegal can be examined. The American Museum has no additional material identified as *N. pallida*, but Schouteden (1947) listed it from numerous localities in the Congo.

15. *Nycteris avakubia*

This species was described on a single specimen from Avakubi in Oriental Province. Allen allocated this species to the *hispida* group. The principal character separating this group from the *javanica* (or *arge*) group, however, is the more reduced last lower premolar. In *avakubia* this tooth is relatively large, as in *arge.* Though Allen mentions the large size of this tooth, he apparently did not realize that this character indicated that it should have been placed in the *javanica* (or *arge*) group. From a comparison of Andersen's (1912) diagnoses with the type of *avakubia*, it is clear that the latter agrees with *N. major*, with which it is here synonymized. It is therefore hardly surprising that *avakubia* has not been recorded again since its description. The American Museum has no additional material of *N. major*, but it has been recorded by Schouteden (1947) from Macaco in Kasai Province and Boma in Leopoldville Province.

16. *Nycteris arge*

This species was correctly identified by Allen from Avakubi, Medje, and Niangara in Oriental Province. The American Museum also has specimens from Lukolela in Equator Province. Schouteden (1947) recorded the species from a number of localities in the Congo.

17. *Nycteris major*

Allen recorded two specimens under this name, one from Faradje, the other from Garamba, both in Oriental Province. It is clear, however, that these specimens cannot be allocated to *N. major* or to any other member of the *javanica* (or *arge*) group, since the posterior lower premolar is greatly reduced. This character, together with the bifid upper incisors and the more or less semilunate tragus, indicates that these specimens should have been allocated to the *aethiopica* (or *macrotis*) group. Three species of this group, *macrotis*, *aethiopica*, and *luteola*, have been recorded from the

Congo. After examining the types in the British Museum and specimens in the Chicago Natural History Museum, I am inclined to agree with Harrison (1960) and Kulzer (1962) that all three are conspecific. At least tentatively, they may stand as subspecies. Northeastern Congo specimens are probably best allocated to *Nycteris macrotis luteola* (Verchuren, 1957). Interestingly enough, Lang and Chapin (*in* Allen, Lang, and Chapin, 1917, pt. III) expressed surprise that "*Nycteris major*" was found by them only in the savanna, although it was originally described from the forest. Since their *major* is really *macrotis*, already well known from the savanna, the mystery is solved. The American Museum has no other specimens of *N. macrotis* from the Congo, but there are several literature records. Verschuren (1957) has recorded *luteola*, and Hayman (1954) *aethiopica*, from localities in Oriental Province. Schouteden (1947) and Hayman (1954) listed *macrotis* from several localities in Leopoldville, Kasai, and Katanga provinces.

18. *Lavia frons affinis*

Allen correctly identified specimens of this form from Faradje in Oriental Province. The status of the subspecies of *Lavia frons* is somewhat confused, however, since it is not clear what the characters of the nominate subspecies (*L. f. frons* from Senegal) are. In east Africa, two subspecies have been described, a small one from the central Sudan (*affinis*) and a larger one from Kenya (*rex*). These two subspecies are reasonably distinct from each other, but in the absence of material from Senegal or neighboring regions, it is not clear in what way either of the two east African subspecies differs from *L. f. frons*. Besides the Faradje series, the American Museum has specimens from Kasenyi and Mahagi Port on Lake Albert in Oriental Province. Schouteden (1947) recorded the species from numerous localities, most of these records being referred to *L. f. frons*.

19. *Rhinolophus hildebrandti eloquens*

Allen correctly recorded this form from Aba in Oriental Province. However, it appears that *eloquens* is not conspecific with *hildebrandti*, since the two are sympatric in Kenya (Harrison, 1960) and the Sudan (Chicago Natural History Museum specimens). *Rhinolophus eloquens*, however, appears to be conspecific with *R. aethiops* described from Southwest Africa. Ellerman, Morrison-Scott, and Hayman (1953) consider *aethiops* a form of *R. fumigatus*, described from Abyssinia and represented by *R. f. exsul* in Kenya. The American Museum of Natural History, however,

has notes and measurements of the cotypes of *R. aethiops* made by the late John Eric Hill at the Berlin Museum in 1937. These have forearm measurements of 57 mm., which agrees very well with measurements of *eloquens* from the Sudan (55-60), but are much larger than those of *fumigatus exsul* from the Sudan (47-49) and somewhat smaller than those of *hildebrandti* from the Sudan (60-63). I am therefore inclined to agree with Sanborn (1939) that the middle-sized species in Kenya, southern Sudan, and northeastern Congo is best called *R. aethiops eloquens*. Besides the Aba material, the American Museum has specimens from Luofu and Rutschuru, both in Kivu Province. Schouteden (1947) mentioned two records in the Congo proper under the name "*Rhinolophus hildebrandti eloquens*," but it is not clear whether they referred to *hildebrandti* or to *aethiops eloquens*.

20. *Rhinolophus abae*

Allen described this form from Aba, Oriental Province, as a member of the *augur* or *ferrumequinum* group. It differs from African members of this group, however, by its noseleaf, particularly the very broad horseshoe and densely hairy anterior face of the sella. The skulls show a longer palatal bridge (between anterior and posterior emarginations) and broader periotic bones (with resultant narrowing of the basioccipital) than is usual in the *ferrumequinum* group. All these features are characteristic of the *luctus* group in Africa, particularly *hildebrandti*, *aethiops*, and *fumigatus*. The large median anterior nasal swellings on the skull are also characteristic of the *luctus* group as opposed to *ferrumequinum* and *clivosus*, though found in some other African members of the *ferrumequinum* group. The specimens of *R. abae* appear in fact to be indistinguishable from *R. fumigatus* on a species level. Pending a general revision of *fumigatus*, however, it is perhaps wise to retain it as a subspecies, *R. f. abae*, though it is very close to *R. f. exsul* of Kenya and Tanganyika. The American Museum has no additional Congo specimens of *R. fumigatus*. The only published records from the Belgian Congo proper are from Oriental Province, as *abae*. These are from Bunia (Schouteden, 1947) and Garamba (Verschuren, 1957).

21. *Rhinolophus axillaris*

Allen described this species from Aba in Oriental Province. I am inclined to agree with Allen that it is a close relative of *R. landeri*. In fact as Hayman (*in* Sanderson, 1940) and Verschuren (1957) have pointed out,

axillaris is best considered a synonym of *R. landeri lobatus*. The axillary patch of stiff hairs, the principal character of *axillaris*, is found throughout the species *R. landeri*. The American Museum has no other Congo specimens. The species has been recorded either as *axillaris* or *lobatus* from a number of localities in the Congo by Schouteden (1947), Hayman (1954), Verschuren (1957), Anciaux de Faveaux (1958), and Rahm and Christiaensen (1963).

22. *Hipposideros caffer centralis*

Allen correctly recorded this form from Avakubi, Medje, Niangara, Faradje, Aba, and Poko in Oriental Province and from Leopoldville in Leopoldville Province. I follow Lawrence (1964) in recognizing *centralis* as a valid subspecies. On the other hand I agree with J. Edward Hill (1963) in regarding *ruber* (along with *centralis*) as a subspecies of *H. caffer* rather than as a distinct species as Lawrence argued. I agree that in much of east Africa the two behave as separate species, but I believe (on the basis of specimens in the British Museum) that intergradation occurs in Angola. The American Museum has additional specimens of *H. c. centralis* from Anguma in Oriental Province, Rutschuru in Kivu Province, and Luluabourg in Kasai Province. Schouteden (1947) recorded *H. c. centralis* from a number of Congo localities, as well as listing a few records of other subspecies of *H. caffer* from the Congo.

23. *Hipposideros caffer niapu*

This form was described by Allen from Niapu in Oriental Province, distinguished from *centralis* and *guineensis* only by its somewhat greater size. It is true that Niapu specimens are somewhat larger than those from other localities in the northeastern Congo, but there is also a good deal of local variation in material from among those other localities. It would therefore be possible to regard the Niapu population as simply the largest of these. Another possibility is that the Niapu population is referable to, or shows intergradation with, the rather large *H. c. guineensis* of west Africa. More material from the northwestern and north-central Congo is necessary to establish the true situation. Actually the subspecific distinction of *H. c. guineensis* from *H. c. centralis* is also somewhat in doubt. In view of these uncertainties and until a detailed revision of the subspecies of *Hipposideros caffer* is made, the Niapu population may be retained provisionally as *H. caffer niapu*. As far as I am aware, the only additional record of *H. c. niapu* is Schouteden's (1947) from Mongbwalu

in Oriental Province. This locality, however, is about 250 miles east of Niapu and separated from it by localities from which *centralis* has been recorded. The American Museum has specimens identified as *H. c. guineensis* from Lukolela, Equator Province.

24. *Hipposideros abae*

Allen described this species from Aba in Oriental Province. It appears to be a well-marked species, certainly quite distinct from any other African *Hipposideros*, its only close relatives being, according to J. Edward Hill (1963), Indo-Malayan. The American Museum has no specimens other than the original series. Verschuren (1957) and J. Edward Hill (1963) have summarized the known distributional records. Although the species is known east to Uganda and west as far as Portuguese Guinea, the few Congo records are all from Oriental Province.

25. *Hipposideros nanus*

This species was described by Allen on the basis of a single specimen from Faradje, Oriental Province. Two conflicting views have recently been published concerning its status. J. Edward Hill (1963) regarded *nanus* as a synonym of *H. beatus*, whereas Lawrence (1964) considered it a subspecies of *H. caffer*. I agree with Lawrence that *nanus* is quite different from *beatus* (at least from specimens I have seen identified as *beatus*, which were borrowed from the Museum of Comparative Zoölogy and presumably seen by Miss Lawrence). The problem is complicated by the fact that while Hill and Lawrence appeared to be discussing the same form when they referred to *beatus*, the characters they used are entirely different. The principal character used by Hill (size of pm^2 and its extrusion from the tooth row) seems quite variable in both species. Lawrence wrote of *nanus* as "of nearly the same size as *centralis*." The type of *nanus*, however, is very small (forearm, 43 mm.; condylocanine length, 13.8 mm.), much smaller than the large *centralis*. It is difficult to believe that Lawrence was writing of the same form as the type of *nanus*. Actually, while true *nanus* is somewhat smaller than any previously recognized form of *H. caffer*, it is not much smaller than some specimens from the Sudan (probably best referred to *H. c. tephrus*). I am therefore inclined to agree with Lawrence (1964) in regarding *nanus* as a subspecies of *H. caffer*. The American Museum has no other specimens of this form but does have a specimen of *H. c. caffer* from Kasenyi (Lake Albert) in Oriental Province. Verschuren (1957) summarized the few known records, all in Oriental Province.

26. *Hipposideros langi*

This species was described by Allen who recorded it from Avakubi (type locality), Medje, Niangara, and Niapu, all in Oriental Province. Allen admitted that it was quite similar to *H. cyclops* and in a footnote of a later publication (1922, p. 2) he considered *langi* only a subspecies of *cyclops*. I am in complete agreement with Hayman (1935), Verschuren (1957), and J. Edward Hill (1963) that *langi* is best considered a synonym of *H. cyclops*. The American Museum also has specimens of *H. cyclops* from Lukolela in Equator Province. Verschuren (1957) summarized the other known Congo records, all of which except Beni (Kivu Province) are in Oriental Province.

27. *Hipposideros gigas niangarae*

This was described by Allen on the basis of one specimen from Niangara, Oriental Province. *Hipposideros gigas* is currently considered a subspecies of *H. commersoni* (J. Edward Hill, 1963). The American Museum has no other specimens of *H. commersoni* from the Congo, and there appear to be no other records of the species in the northeastern Congo. The subspecies of *H. commersoni* are in a rather unsatisfactory state, and Allen's form may be provisionally retained as *H. commersoni niangarae*. Schouteden (1947) summarized most of the known records of *H. commersoni* in the Congo.

28. *Myotis bocagii bocagii*
29. *Myotis bocagii cupreolus*
30. *Myotis bocagii hildegardeae*

These three subspecies were recorded by Allen from Leopoldville, from Bafwabaka and Medje in Oriental Province, and from Aba and Faradje in Oriental Province, respectively. They are all correctly identified to species and probably also to subspecies, though I have not compared them with topotypes of the three subspecies. A critical revision of the subspecies of *M. bocagei* would, however, be desirable. The American Museum has no additional Congo specimens. Verschuren (1947) and Hayman (1954) listed a number of localities for this species in the Congo.

31. *Pipistrellus nanus*

Allen recorded this species from 11 localities in Oriental Province. All this material has been re-examined and appears to be correctly identified.

A considerable range of size can be seen in these series, which raises the question of the relationships of *P. nanus* to various closely similar forms averaging slightly smaller and usually paler in color, such as *stampflii* (= *minusculus*) of Liberia, *culex* described from Nigeria, *helios* described from Kenya, *fouriei* of South-West Africa and Angola, and possibly *pagenstecheri* of the extreme western Congo. I am tentatively inclined to regard all these as subspecies of the earliest named form, *stampflii*. However, in view of the close approach of the variation of some populations of *nanus* (from the Congo and elsewhere) to these small forms, it is possible that all represent small-sized populations of *P. nanus*. Contrary to Allen's statement, examination of the type and other specimens of *P. aero* from Kenya confirms my belief that this species is quite distinct from *P. nanus* and is probably more nearly related to *P. anchietai* or *P. rusticus*. The only other Congo material of *P. nanus* in the American Museum is a series from Luluabourg, Kasai Province. The specimens recorded by Hatt (1940) were misidentified. They are actually *P. anchietai*, previously known only from Angola. The American Museum also has a large series of *anchietai* from northwestern Northern Rhodesia. Schouteden (1947) recorded *P. nanus* from many Congo localities.

32. *Pipistrellus abaensis*

This species was described by Allen from Aba in Oriental Province on the basis of three specimens, one of which was immature, another a skin only. It was stated to be similar to *P. nanus* in size but to differ from it in a number of characters, including paler coloration, presence of bare patches on the sides of the lower back, ear shape, and the character of the upper incisors and upper premolars. Only for the first two characters did Allen state what the difference was, and for the remainder, I cannot see any constant differences. The difference in hairiness of the sides appears to be an artifact of stuffing, the Aba specimens having more cotton in the posterolateral portions than do the other Congo skins. This causes a relatively narrow and inconspicuous band of hairless skin to be stretched out into a conspicuous area. Simil parallel variation in extent of the hairless area and amount of stuffing in the skin can be seen in a series of *P. nanus* from Nyasaland in the American Museum. The paler coloration certainly distinguishes the Aba adults (the immature is dark) from *nanus* of other localities in Oriental Province. Equally light individuals together with intermediates, however, occur in series from Kasai Province (Congo) and Nyasaland in the American Museum. *Pipistrellus abaensis* is therefore best regarded as a pale savanna population of *P. nanus*. It seems doubtful

that it is even worth recognizing as a subspecies, and I therefore tentatively synonymize it. In view of these facts, it is hardly surprising that no additional material has been identified with this species.

33. *Pipistrellus musciculus*

Allen identified a single specimen from Avakubi in Oriental Province with this species. He gave no reasons, and it is not clear why he did so, since the characters of the Avakubi specimen agree better with the original description of *P. nanulus* than with that of *P. musciculus,* particularly with regard to its somewhat larger size, more strongly bifid inner upper incisors, and better developed anterior upper premolars. The Avakubi specimen, being a female, does not show the large penis with baculum so characteristic of *P. nanulus,* but it otherwise agrees very closely with American Museum males from Gabon and Fernando Poo that do show this highly distinctive feature. Examination of the types of *musciculus* and *nanulus* confirms the fact that these characters separate the two forms.

Even if it could be shown that the size of the anterior upper premolar and other characters are too variable to use and that *musciculus* and *nanulus* are conspecific, the latter name, being older, must be used. The American Museum has no other Congo specimens of *nanulus,* and there appear to be no other Congo records.

34. *Scotozous rüppelii*

Allen identified a single specimen from Poko in Oriental Province with this form. The specific identification is correct, but *Scotozous* is now usually regarded as a subgenus of *Pipistrellus* (Ellerman, Morrison-Scott, and Hayman, 1953). If *fuscipes* (described from Uganda) is a valid subspecies of *P. rueppelli,* as I think it is, then the Congo specimen is probably referable to it. There is, however, some doubt about the status of *fuscipes* (Hayman, 1954; Aellen, 1957). The American Museum has no other Congo specimens. Schouteden (1947) and Hayman (1954) recorded the species from a number of Congo localities.

35. *Eptesicus tenuipinnis*

Allen correctly identified this form from Ngayu, Oriental Province. The American Museum also has specimens from Lukolela, Equator Province, and Luluabourg, Kasai Province. Schouteden (1947) recorded the species from many Congo localities.

36. *Eptesicus ater*

This species was described by Allen from Faradje and Niangara in Oriental Province. It was distinguished from *tenuipinnis* by its smaller size and darker color. The comparison was made, however, on the basis of only two adults of *ater*, both males, one of which is in alcohol. Both characters are variable, and the rather small gaps in both size and color are completely bridged by the small series of *tenuipinnis* from Luluabourg. Very probably *ater* will prove to be a synonym of *tenuipinnis*. Since, however, I have compared no material from near the type locality of *tenuipinnis* (French Congo), I am inclined to follow Sanborn (1950) and consider the darker form a subspecies, *Eptesicus tenuipinnis ater*. I cannot follow Sanborn, however, in considering *phasma* a subspecies of *E. tenuipinnis*. The former seems much more closely related to *E. rendalli*, of which it is probably a subspecies. The American Museum has additional specimens identified as *ater* from Kabare (southern end of Lake Edward) in Kivu Province.

37. *Eptesicus faradjius*

This species was described by Allen from Faradje and Niangara in Oriental Province. It was compared chiefly with the quite different *flavescens*. No comparison was made with *E. rendalli*, of which Verschuren (1957) considered *faradjius* a synonym. Having seen the type of *rendalli*, I am inclined to agree that they are conspecific. Since, however, I have been able to make no direct comparison between *faradjius* and material of *rendalli* from anywhere near Gambia, the type locality, I am inclined to let the northeastern Congo form stand as a subspecies, *Eptesicus rendalli faradjius*. I am unable to comprehend Allen's statement that *faradjius* "is very different in coloration from *E. phasma*." A paratype of *phasma* G. M. Allen from Meru River, Kenya, seems indistinguishable in color from some specimens of *faradjius*. I am inclined to regard *phasma* as another subspecies of *E. rendalli*, since the distinguishing characters mentioned by G. M. Allen (1911) do not appear to hold in the fairly large series of *faradjius*. The American Museum also has a series of *E. rendalli* from Luluabourg, Kasai Province. The only other records appear to be Verschuren's (1957) from the Garamba National Park.

38. *Eptesicus minutus minutus*

Allen identified two specimens from Niangara and Isiru, both in

Oriental Province, under this name. The name, however, is antedated, as was pointed out as early as 1929 by Thomas and repeated in various works at least three times since (G. M. Allen, 1939; Ellerman, Morrison-Scott, and Hayman, 1953; Rosevear, 1962). In spite of this fact, the name has been used several times in recent years (e.g., Verschuren, 1957). There is also considerable uncertainty as to just how many small, dark-winged, continental African species of *Eptesicus* should be recognized. This confusion has been only partly cleared up by Rosevear (1962). The forearms of Allen's two specimens measure 28 and 29 mm. The skull of the Isiro specimen has a condylobasal length of 10.9 mm. and a greatest length (excluding incisors) of 11.6 mm. (The skull of the Niangara specimen was stated by Allen to be fragmentary and has apparently since been lost.) These specimens therefore fall just below the size range given by Rosevear for *E. somalicus* (forearm, 30-32; greatest length of skull, 11.7-12.3). They fall somewhat above the single figure for *E. pusillus* (forearm, 26). The skull of the Isiro specimen has been compared with skulls of *somalicus* from Kenya, Ethiopia, and the northwestern Congo. From all of these, the Isiro skull differs by its smaller size and shorter rostrum. I am therefore inclined to allocate Allen's specimens to *E. pusillus*. In this respect I am in agreement with someone (probably John Eric Hill) who, between 1920 and 1960, reidentified the Isiro skull as *E. pusillus*.

Mention must also be made of four other small, dark-winged, African *Eptesicus*. Of these, *ugandae* is clearly a subspecies of *E. somalicus*. Rosevear allocates *guineensis* and *rectitragus* (the former with some reservation) to *E. capensis*. From the original descriptions, both appear to me to agree better with *E. somalicus* or *E. pusillus*. However, I have not seen any material of either and therefore tentatively follow Rosevear. The status of *vansoni* (not mentioned by Rosevear) is somewhat pecul . Considered a subspecies of *E. zuluensis* by Ellerman, Morrison-Scott, and Hayman (1953), Ansell (1960a) stated that Meester (no reference) considered it a synonym of *zuluensis*. Yet while *zuluensis* appears from available measurements to be a large southern representative of *somalicus*, *vansoni* appears to be more like Allen's northeastern Congo specimens (and closely similar individuals from the southern Sudan in the Chicago Natural History Museum). I have seen no typical *zuluensis*, however, and only a single specimen of *vansoni* from Bechuanaland (C.N.H.M. No. 38470). In conclusion, therefore, I tentatively identify the Isiro and Niangara specimens as *E. pusillus*, the oldest of the named forms discussed, but available material seems insufficient to establish this identification with certainty. The American Museum has no additional specimens of *E. pusillus*, and the only other definite record is from Boma, Leopoldville Province (Schouteden, 1947).

39. *Eptesicus garambae*

Allen described this form from Garamba in Oriental Province. It was compared only with the much smaller *ugandae*. No comparison was made with the closely similar *E. capensis* with several subspecies in southern Africa. Comparison with material of several of these shows no differences on a specific level. From the single holotype specimen, *garambae* would appear to be one of the smaller subspecies somewhat resembling in size *E. c. gracilior* of Natal and Transvaal. The Garamba form may therefore stand as the subspecies *Eptesicus capensis garambae*. The American Museum has no other Congo specimens. Verschuren (1957) recorded a number of additional specimens of *garambae* from near the type locality. Hayman (1954) has recorded *capensis* from farther west in Oriental Province and also in Katanga Province. Schouteden (1947) has recorded *capensis* from Kasai Province.

40. *Mimetillus moloneyi*

Specimens of this species were correctly identified by Allen from Medje, Avakubi, and Stanleyville, all in Oriental Province. Since I am inclined to agree with Ellerman, Morrison-Scott, and Hayman (1953) in considering the southern forms *thomasi* and *berneri* subspecies of *M. moloneyi*, the northeastern Congo specimens, which seem to belong to the nominate northern form, are here identified as *M. m. moloneyi*. The American Museum has no other Congo specimens of *Mimetillus*. Schouteden (1947) listed *moloneyi* from several localities in Oriental Province and *thomasi* from two places in Katanga Province.

41. *Scoteinus schlieffenii*

Allen identified a specimen from Niangara, Oriental Province, under this name. The specimen in question is clearly *Scotoecus* rather than *Scoteinus*, as is evident from its much broader, more robust rostrum. J. A. Allen probably erred as a result of following G. M. Allen (1914), who identified a similar specimen from Bados, Blue Nile Province, Sudan, as *Scoteinus*. The latter specimen, which I have seen, is likewise *Scotoecus*. G. M. Allen was in error in stating that *Scoteinus* had a large penial bone. This is another character of *Scotoecus* (well shown in the Niangara specimen), true *Scoteinus* having a very much smaller penis. The specific identity of the Niangara specimen is more difficult to determine. A number of forms have been described as species, mostly on minor color

differences. Since specimens are rare in collections, the amount of intrapopulational variation has never been satisfactorily determined. The fact that the Niangara specimen has been in alcohol for 50 years makes color comparisons difficult. Tentatively I follow Hayman (1963) in recognizing only two species, the dark-winged *hirundo* and the light-winged *albofuscus*. Of these, the northeastern Congo specimen clearly belongs with the dark-winged group. The most reasonable allocation of the Niangara specimen appears to be with one of the three forms described from Kenya. Of these, the best agreement seems to be found with *artinii* (as the late John Eric Hill identified it) rather than with *hindei* or *albigula*. However, after comparison of several specimens of dark-winged *Scotoecus* from the Sudan and one from Tanganyika, also study of a number of skins and skulls in the British Museum, including the types of *hindei* and *albigula*, I am inclined to regard all three east African forms as synonyms. The Niangara specimen is therefore here identified as *Scotoecus hirundo hindei*, the oldest of the three names. Though I agree with Ellerman, Morrison-Scott, and Hayman (1953) in considering *Scoteinus* a subgenus of *Nycticeius*, I disagree with them in regarding *Scotoecus* as also congeneric. The latter appears to be much more distinct in its broader rostrum and long bony penis. *Scotoecus* is, however, variable in the presence or absence of the small anterior upper premolar (Hayman, 1963). This tooth is present on both sides of the Niangara specimen. The American Museum has no other specimens of *Scotoecus* from the Congo. The only other record of the dark-winged group in the Congo is Hayman's (1954) of *hirundo hindei* from Katanga Province.

42. *Pachyotus altilis*

This form was recorded by Allen from Faradje in Oriental Province. The generic name *Scotophilus* is, however, currently used instead of *Pachyotus*. I am inclined to agree with the suggestion of Aellen (1952, 1956b) that *altilis* is best considered a synonym of *S. l. leucogaster*, to which the Faradje specimens should be referred. The American Museum has no other Congo specimens, and indeed the species does not seem to have been otherwise recorded from the Congo. Verschuren's (1957) records (under the name *nigrita*) from Garamba in Oriental Province may well belong here.

43. *Pachyotus nigrita nux*

This form was correctly identified by Allen from Medje in Oriental

Province. As mentioned above, the name *Scotophilus* is now used for this genus. The American Museum has no other Congo specimens. Both Schouteden (1947) and Hayman (1954) recorded *nigrita* and its subspecies *nux* from numerous localities in the Congo.

44. *Glauconycteris papilio*

Allen identified specimens of this form from Aba, Faradje, and Niangara, all in Oriental Province. This form is, however, now usually regarded as a subspecies of *Glauconycteris variegata.* The American Museum has no other Congo specimens. Schouteden (1947), however, recorded it from four additional localities in Leopoldville and Katanga Provinces.

45. *Glauconycteris humeralis*
46. *Glauconycteris alboguttatus*

The former was described by Allen from Medje and Avakubi, both in Oriental Province. The latter was described on a single specimen from Medje. The two forms differ from each other considerably in size as well as color pattern, as Allen pointed out. Actually *alboguttatus*, in all characters except color pattern, agrees very closely with specimens of *G. argentata* from the French Congo in the American Museum. Hayman and Jones (1950), on the basis of a large series from Sierra Leone, presented a rather convincing case for regarding both *humeralis* and *alboguttatus* as synonyms of *G. poensis*, because the series showed great variation in both size and color pattern. Hayman (*in litt.*) informs me that he now believes that *humeralis* and *alboguttatus* are not synonyms of *G. poensis.* However, until the relationships of the western populations to the two Congo forms are clarified, I prefer to follow Hayman and Jones (1950). Probably *G. argentata* should also be considered in determining the relationships of these taxa. The American Museum has no additional specimens of *G. poensis.* Schouteden (1947) has recorded *alboguttata* from Equator Province, and Hayman (1954) has recorded *poensis* from both Equator and Oriental provinces.

47. *Miniopterus breyeri vicinior*

Allen described this form from Aba, Oriental Province. Since then Sanborn (1936) has made *vicinior* a subspecies of *natalensis*, *breyeri* being considered a synonym of the latter. Harrison (1953) has revised the *Miniopterus* of southern Africa and recognized two species, the large

natalensis and the small *fraterculus*. While agreeing with Harrison that there are two southern African species, I cannot see the justification of separating *natalensis* from the Eurasian and North African *M. schreibersi*. Harrison mentioned only two characters as separating them, color and ear shape. Color seems quite variable among different populations, while I cannot see the difference in ear shape that Harrison described and figured. While very close to *M. s. arenarius*, Allen's subspecies does appear to be valid (largely on the basis of small size), and I am inclined to call it *Miniopterus schreibersi vicinior*. The American Museum has no additional specimens, and there appear to be no other Congo records of this subspecies. Anciaux de Faveaux (1958), however, records the related subspecies *M. s. arenarius* from Katanga Province.

48. *Miniopterus inflatus*

Allen recorded this form from Thysville in Equator Province. As he mentioned, all these specimens are definitely smaller than Thomas' type of the species. In describing *M. i. villiersi* from Guinea, Aellen (1956a) suggested that the Thysville specimens were referable to it, a statement repeated by him in a later paper (Perret and Aellen, 1956). This is also mentioned by Anciaux de Faveaux (1958). In these papers there are several references to the possibilities that two species are involved. Indeed, it is not clear why *villiersi* should have been associated with *inflatus* rather than with *natalensis*, since the only two possible characters (larger size and greater zygomatic width) seem to be quite variable in southern African *natalensis* (Harrison, 1953; and specimens in the American Museum from Cape Province, Natal, Nyasaland, and Northern Rhodesia). Since the Thysville specimens seem to fall within the variability of *natalensis* in these regards (unlike the larger true *inflatus*), I am inclined to refer *villiersi*, like *natalensis*, to *M. schreibersi*, using the combination *Miniopterus schreibersi villiersi*. It should be pointed out, however, that the size difference (between *villiersi* and true *inflatus*) is not great and that both the Thysville series and the one in the American Museum from Nyasaland are distinctly larger than any other *M. schreibersi* examined. The American Museum has no other specimens. Anciaux de Faveaux (1958) summarized Katanga records under the name *villiersi*. Hayman (1954) has recorded what Aellen (1956a) believed to be the same form at Mt. Homa in Oriental Province. Schouteden (1947) recorded *inflatus* from Mulungu in Kivu Province, but it is not clear whether or not this specimen is also *villiersi*.

49. *Kerivoula cuprosa*

Allen identified specimens under this name from Akenge and Medje, both in Oriental Province. It is quite clear, however, from a check of the characters and figure given by Harrison (1963) that these specimens are referable to *K. smithi* rather than *K. cuprosa.* Particularly diagnostic are the long upper incisors and more or less unicuspidate outer lower incisors of the specimens. The short appearance of the inner upper incisor in Allen's figure is due to damage of the tooth on the left side. The American Museum has no other specimens of *K. smithi,* and indeed these appear to be the first published Congo records.

50. *Myopterus albatus*

Allen correctly identified this species from Niangara in Oriental Province. The American Museum has no additional specimens, and these seem to be the only recorded specimens except for the type, described from an unknown locality on the Uele River in Oriental Province. Some authors (e.g., Simpson, 1945) believe that this genus should be called *Eomops,* since there is some doubt as to just what the generic type of *Myopterus* is.

51. *Nyctinomus ansorgei*

Allen correctly identified this species from Faradje in Oriental Province. The American Museum has no other specimens. *Tadarida ansorgei* has also been recorded from the Garamba National Park (Oriental) and Bitshumbi (Kivu) by Verschuren (1957) and from Mwasingusha (Katanga) by Anciaux de Faveaux (1958). The name *Tadarida* is now used in place of *Nyctinomus* for the genus.

52. *Nyctinomus leonis*

Allen identified two specimens by this name, one from Panga, the other from Medje, both in Oriental Province. While these specimens appear to be correctly identified as to species, two comments must be made. First, Allen appeared to regard *leonis* as a typical *Tadarida* rather than a member of *Mops* (now regarded as a subgenus of *Tadarida*). However, Thomas (1913), who revived the name *Mops,* listed the species he included in it, one of which was *leonis.* He certainly saw this species since he had previously described it. Moreover, Allen's specimens clearly show the char-

acter that Thomas chiefly used to distinguish the genus, namely, the reduced third commissure on the last upper molar. If Allen had a different concept as to how *Mops* should be distinguished, he nowhere made this clear.

Secondly, the only way by which the two specimens can be distinguished from the form that Allen described as *Nyctinomus ochraceus* is by color. This is somewhat variable in the series of *ochraceus*, and in addition the Panga skin of *leonis* was collected in September (the Medje specimen is in alcohol), whereas the *ochraceus* series was collected in March. Some person, perhaps the late John Eric Hill, has left a note with the Panga skin, "Probably same as *Mops ochraceus*, but taken in the fall." This suggests the possibility that the difference in color is seasonal. It seems almost certain that all these specimens belong together; they are discussed further under "54. *Nyctinomus ochraceus*."

53. *Nyctinomus cisturus*

Allen identified under this name a single immature specimen from Niangara in Oriental Province. *Tadarida cisturus* is a small member of the subgenus *Tadarida* with a high braincase. It is almost certainly a close relative of *T. ansorgei* but is smaller, which is quite evident both from Thomas' original description and from my notes on the type. The palate of the Niangara specimen is unfortunately damaged, but the braincase is clearly much too low and flat to be referable to *cisturus* or any other *Tadarida* with a high braincase. This character together with the unreduced commissure on the last upper molar clearly rules out the subgenus *Mops*. The well-developed band connecting the ears rules out the subgenus *Mormopterus*. The Niangara specimen does not agree with any of the African species of the subgenus *Tadarida* but does agree closely with *T.* (*Chaerephon*) *nigeriae*, and indeed this appears to be the only species of African *Tadarida* that the Niangara specimen closely resembles. There seems no good reason to regard *Nyctinimus spillmani* Monard, from Angola, as anything except a subspecies of *T.* (*C.*) *nigeriae*. The difference between the two forms appears to be largely one of wing color, and, as Ansell (1960b, p. 357) has shown, this character is not entirely constant in *spillmani*. It is not clear to which of the two subspecies of *T. nigeriae* the Niangara specimen belongs. From Thomas' description and from my observation of the type of *nigeriae*, the wing is dark, whereas in *spillmani*, as shown by numerous specimens from Northern Rhodesia, it is normally pale. In the Niangara specimen the wing from the third digit forward is pale, whereas, behind the fourth digit, the wing is dark. Probably the

Niangara specimen is an intergrade, but, on the basis of one immature specimen, it is difficult to be sure. I would therefore identify the Niangara specimen as *Tadarida* (*Chaerephon*) *nigeriae* ssp. The American Museum has no other Congo specimens. *Tadarida n. spillmani* has been recorded from several localities in Katanga Province (Anciaux de Faveaux, 1958).

54. *Nyctinomus ochraceus*

Allen described this species from a series collected at Medje in Oriental Province. As I indicate above, I regard the two specimens allocated by Allen to *leonis* as members of the same taxon. In view of the fact that *ochraceus* agrees best with the description of *T. leonis*, it is surprising that Allen made no mention of *leonis* in his description, comparing his *ochraceus* only with *T. thersites*, a related but distinct form. [*Tadarida leonis* and *T. thersites* are compared in connection with "66. *Mops* (*Allomops*) *occipitalis*" below.] Lang and Chapin, however, in their field notes (Allen, Lang, and Chapin, 1917, p. 544) comment on the close resemblance in appearance and behavior between their *leonis* and *ochraceus*. Also puzzling is Allen's allocation of *ochraceus* to "*Nyctinomus*" (= typical *Tadarida*), after Thomas (1913) had clearly allocated both *leonis* and *thersites* to *Mops*. Actually little besides ventral coloration distinguishes *ochraceus* from *leonis*. There seems little doubt that the two forms are conspecific. However, in view of the wide separation of the type locality of *ochraceus* from that of *leonis* (Sierra Leone), together with the apparent color difference, I tentatively regard Allen's Congo form as a subspecies, *Tadarida* (*Mops*) *leonis ochraceus*. The American Museum has no additional specimens, and there are apparently no other published records from the Congo identified either as *leonis* or *ochraceus*.

55. *Chaerephon frater*

Allen described this form from Malela in Leopoldville Province. *Chaerephon* is now usually considered a subgenus of *Tadarida*. Allen compared his *frater* to *hindei*. I agree with Harrison (1960) in regarding *hindei* as conspecific with *limbata*, from which it differs chiefly in size. I also agree with Ansell (1960b) that *limbata* is best considered a subspecies of *T. pumila*. Actually, *frater* appears to be much more like *T. p. limbata*, with which it agrees closely in size and otherwise, than the larger *T. p. hindei*. Schouteden (1947) indeed regarded *frater* as a synonym of *limbata*. Allen's form may tentatively be retained as a subspecies, *Tadarida* (*Chaerephon*) *pumila frater*. Another Congo subspecies is the form described from

Oriental Province as *Chaerephon faini* (Hayman, 1951), described on the basis of color and compared only with the much larger and otherwise different *ochraceus* [which, as I indicate above, is a subspecies of *T.* (*Mops*) *leonis*]. Having seen the type and other specimens from nearby areas, I consider coloration in this group to be much too variable to be used as a specific character. Otherwise *faini* appears to fit into the *pumila* group very closely, and I regard it as at most a subspecies of *T. pumila.* Aside from the specimens discussed below under the heading "59. *Chaerephon* (*Lophomops*) *cristatus*," the American Museum has no other specimens of *T. pumila.* Schouteden (1947), however, recorded it from many localities throughout the Congo. The species is probably the most common molossid in Africa.

56. *Chaerephon russatus*

Allen described this species from a good series collected at Medje, Oriental Province. It appears to be a well-marked species intermediate in size between *T.* (*C.*) *pumila* and *T.* (*C.*) *nigeriae* and about the size of *T.* (*C.*) *major* but with a higher skull than any of these. It also lacks both the peculiar interaural lobe of *major* and the specialized crest seen in males of *chapini* and *pumila.* The American Museum has no additional specimens of *russatus*, and there appear to be no other records from the Congo or elsewhere.

57. *Chaerephon* sp. indet.

Allen so designated a single immature specimen from Avakubi in Oriental Province. Allen mentioned the possibility that the Avakubi specimen was referable to *aloysii-sabaudiae*,[1] but stated that this species was unidentifiable, no mention being made of the skull in the original description. He apparently overlooked a later paper by the describer (Festa, 1909) in which fairly good photographs and extensive measurements of the skull were given. More recently, Lanza and Harrison (1963) have given an extensive redescription with good figures of external, cranial, and dental morphology, together with measurements. From these two papers it is clear that *T. aloysiisabaudiae* is a well-marked species of the subgenus *Chaerephon* and is not referable to *Mops* as de Beaux (1922) and, following him, G. M. Allen (1939) supposed. It is also evident that the Avakubi specimen is referable to this species. I cannot agree with Allen's

[1] This name should be emended to *aloysiisabaudiae* to conform to the present International Rules of Zoological Nomenclature.

statement that "Geographical considerations, however, indicate that the two forms should not be closely related," since the localities are less than 200 miles apart and in similar vegetation zones. I would therefore identify the Avakubi specimen as *Tadarida* (*Chaerephon*) *aloysiisabaudiae*. This is apparently the only valid record except for that of the type, since Lanza and Harrison (1963) have shown that the specimens recorded by de Beaux (1922) are actually *T.* (*Mops*) *condylura*.

58. *Chaerephon* (*Lophomops*) *chapini*

This species was described by Allen on the basis of two specimens from Faradje, Oriental Province. Braestrup (1933) and Hayman (1938) have rather convincingly shown that the subgenus *Lophomops* (described by Allen with *chapini* as the type) is invalid. As a species, however, *T.* (*C.*) *chapini* appears to be distinct, characterized externally by the long, sharply bicolored crest. Allen mentioned no cranial characters, and possibly there is no certain way of distinguishing the skull of *chapini* from the skulls of various forms of *T.* (*C.*) *pumila*. Certainly the number of lower incisors is unreliable, since of the three *T. chapini* in the American Museum collection, one (a male of *T. c. shortridgei* from Angola) has both pairs of lower incisors. Probably the best cranial character is the better developed lacrimal tubercle, but in general the rostrum is longer and more slender in *T.* (*C.*) *chapini*. Since other forms have been described which are considered by Ellerman, Morrison-Scott, and Hayman (1953) to be subspecies of *chapini*, the Faradje form may be designated *Tadarida* (*Chaerephon*) *chapini chapini*. The American Museum has no other Congo specimens, and there appear to be no other Congo records of the species.

59. *Chaerephon* (*Lophomops*) *cristatus*

Allen described this form from Boma, Leopoldville Province. The species was compared only with *chapini*, from which it is clearly distinct. Boma is, however, very close to Malela, the type locality of *frater* (see above, No. 55). The Malela series was collected in July, whereas the Boma specimens were taken in January. Inasmuch as the only character that appears to separate *frater* and *cristatus* is the crest, and since Braestrup (1933) has shown fairly clearly that this character is seasonal in its occurrence, it follows that the two forms are synonymous, as Braestrup suggested. I select *frater* as the name of this form [a subspecies of *T.* (*Chaerephon*) *pumila*], since it has page priority. Under the name *cristata*, this form has also been recorded from Angola (Ellerman, Morrison-Scott, and

Hayman, 1953). Schouteden (1947) synonymized both *frater* and *cristatus* with *limbata*, another subspecies of *T.* (*Chaerephon*) *pumila*.

60. *Chaerephon* (*Lophomops*) *abae*

Allen described this species from a series collected at Aba in Oriental Province. It was compared with *major* and *emini*. I am in complete agreement with Hayman (1938) and Verschuren (1957) that *abae* as well as *emini* is a synonym of *Tadarida* (*Chaerephon*) *major*. The alleged differences that Allen gave do not exist, as Hayman pointed out. The specimens from Aba should therefore be designated *Tadarida* (*Chaerephon*) *major*. The American Museum has no other Congo specimens. Indeed the only other Congo record is from the Garamba National Park (Verschuren, 1957). The species therefore appears to reach the Congo only in its northeastern corner.

61. *Mops midas*

Allen correctly identified a series by this name from Faradje, Oriental Province. The American Museum has no other Congo specimens, and the only other record from the Congo appears to be Verschuren's (1957) Garamba record. The species therefore probably enters the Congo only in the northeast. Since *Mops* is usually now regarded as a subgenus of *Tadarida* and since *midas*, rather than *rueppelli*, has been shown to be the correct specific name (Ellerman and Morrison-Scott, 1951), the name should stand as *Tadarida* (*Mops*) *midas*.

62. *Mops congicus*

This species was described by Allen from a series collected at Medje in Oriental Province. It appears to be a well-marked species, rather similar to *midas*, but smaller and with a relatively shorter rostrum. I would therefore identify these specimens as *Tadarida* (*Mops*) *congicus*. The American Museum has no additional specimens, and there appear to be no additional records (but see "64. *Mops trevori*" below).

63. *Mops niangarae*

Allen described this species on the basis of a single specimen from Niangara, Oriental Province. There appear to be no additional records for the species. In most characters, it closely resembles *congicus*, as Allen

indicated. Of the characters Allen mentioned, size does not appear to be significantly smaller than that of smaller specimens of *congicus*, and the color difference is to be expected if *congicus* occurs in the savanna as well as in the forest (see account of *trevori* below). The absence of a band connecting the ears, however, is highly distinctive, as Allen stated, and rather unexpected. Conceivably, this could be a mutant individual, but for the present the Niangara specimen must be regarded as the sole representative of a rare species, probably related to *congicus* and cranially indistinguishable from it, but sharply distinguished by its separate ears. Its name would stand as *Tadarida* (*Mops*) *niangarae.*

64. *Mops trevori*

This specimen was described by Allen from a single specimen collected at Faradje, Oriental Province. This specimen was said to differ from *congicus* in its slightly smaller size, relatively larger ears, lighter coloration, and "cranial characters" (not mentioned, but stated to be "too different to render comparison necessary"). I can detect no cranial differences, and the size difference seems insignificant. The ears of the type of *trevori* (in alcohol) have been compared with those of the two *congicus* in alcohol (most of the series consists of dry skins), and I can see no difference in size (allowing for differences in preservation). Only a difference in coloration (which is real) remains, although it is somewhat difficult to assess, because the type of *trevori* has been in alcohol for more than 50 years. Since Medje (the type locality of *congicus*) is in the forest, whereas Faradje (the type locality of *trevori*) is in the savanna, the color difference is not unexpected. In case the color difference and perhaps other differences should prove constant, I tentatively retain *trevori* as a subspecies of *congicus*, which has page priority. The identification of the Faradje specimen would then stand as *Tadarida* (*Mops*) *congicus trevori.* The only other Congo record is Verschuren's (1957) from the Garamba National Park.

65. *Mops* (*Allomops*) *osborni*

This form was described on the basis of two specimens collected at Kinshasa, Leopoldville Province. I agree with Hill and Carter (1941) in regarding *Allomops* as having no real systematic value, the great extent of the occiput being largely a character of old males. I also agree with Verschuren (1957) that *osborni* is conspecific with *Tadarida* (*Mops*) *condylura.* Whether or not it will prove a valid subspecies or a synonym will depend on a revision of the entire species. The American Museum

has no additional material of *T. condylura* from the Congo. Verschuren (1957) and Anciaux de Faveaux (1958) have summarized most of the Congo records.

66. *Mops (Allomops) occipitalis*

Allen described this form from Avakubi and Medje, both in Oriental Province. As Allen mentioned, it resembles *thersites* quite closely. Allen interpreted the original description of *thersites* as indicating that it is a typical *Tadarida*, but Thomas (1913) listed it as a *Mops*, and I agree with him after seeing the type. Otherwise there seems little to distinguish *occipitalis* from *thersites* except a color difference, which is slight. I am therefore inclined to regard the two as conspecific. Since I have made no direct comparison of topotypes, however, and since the type localities are rather distant from each other, I tentatively regard Allen's form as a subspecies, *Tadarida (Mops) thersites occipitalis*. *Tadarida thersites* is also rather similar to *T. leonis*. It seems best distinguished cranially by the lambdoidal crest which is continuous across the back of the skull in *thersites*, interrupted at the midline in *leonis*. The only other *thersites* in the American Museum collection are two males from Luluabourg, Kasai Province. Schouteden (1917) listed three other records, all from Kasai Province.

67. *Mops (Allomops) faradjius*

Allen described this species on the basis of a single specimen taken at Faradje, Oriental Province. It was compared only with *osborni* from which it is specifically distinct. No comparison was made with *demonstrator*, originally described from Mongalla, Equatoria Province, Sudan. Examination of the type of *demonstrator* and comparison of the type of *faradjius* with a series of *demonstrator* in the American Museum from Bahr-el-Ghazal Province, Sudan, reveal no differences. I therefore regard *faradjius* as a synonym of *Tadarida (Mops) demonstrator*. The species is quite similar to *T. (M.) condylura* but has a more blackish crown. The rostrum is also longer and narrower, and the last upper molar shows a greater degree of reduction, with almost no trace of the third commissure. The two species are sympatric in the southern Sudan. The American Museum has no additional Congo specimens of *demonstrator*, and the only other Congo records are Verschuren's (1957) from Garamba under the name of *faradjius*.

68. *Mops (Allomops) nanulus*

Allen described this species from Niangara in Oriental Province. It

appears to be a well-marked species, related to *T.* (*M.*) *thersites* and *T.* (*M.*) *leonis*, but clearly smaller than either. The American Museum has no additional material of *nanulus*. Schouteden (1947) and Hayman (1954) have recorded it from several localities in the Congo.

SUMMARY OF TAXONOMIC CHANGES

Allen, 1917	This Paper
Eidolon helvum	*Eidolon helvum* Kerr
Epomops franqueti franqueti	*Epomops franqueti franqueti* Tomes
Hypsignathus monstrosus	*Hypsignathus monstrosus* H. Allen
Epomophorus anurus	*Epomophorus anurus* Heuglin
Epomophorus wahlbergi haldemani	*Epomophorus wahlbergi haldemani* Halowell
Micropteropus pusillus	*Micropteropus pusillus* Matschie
Casinycteris argynnis	*Casinycteris argynnis* Thomas
Myonycteris wroughtoni	*Myonycteris wroughtoni* K. Andersen
Taphozous mauritianus	*Taphozous* (*Taphozous*) *mauritianus* E. Geoffroy
Taphozous sudani	*Taphozous* (*Taphozous*) *sudani* Thomas
Saccolaimus peli	*Taphozous* (*Saccolaimus*) *peli* Temminck
Coleura gallarum nilosa	*Coleura afra nilosa* Thomas
Nycteris hispida	*Nycteris hispida* Schreber
Nycteris pallida	*Nycteris hispida pallida* J. A. Allen
Nycteris avakubia	*Nycteris major* K. Andersen
Nycteris arge	*Nycteris arge* Thomas
Nycteris major	*Nycteris macrotis luteola* Thomas
Lavia frons affinis	*Lavia frons affinis* Andersen and Wroughton
Rhinolophus hildebrandi eloquens	*Rhinolophus aethiops eloquens* K. Andersen
Rhinolophus abae	*Rhinolophus fumigatus abae* J. A. Allen
Rhinolophus axillaris	*Rhinolophus landeri lobatus* Peters
Hipposideros caffer centralis	*Hipposideros caffer centralis* K. Andersen
Hipposideros caffer niapu	*Hipposideros caffer niapu* J. A. Allen
Hipposideros abae	*Hipposideros abae* J. A. Allen
Hipposideros nanus	*Hipposideros caffer nanus* J. A. Allen
Hipposideros langi	*Hipposideros cyclops* Temminck
Hipposideros gigas niangarae	*Hipposideros commersoni niangarae* J. A. Allen
Myotis bocagii bocagii	*Myotis bocagii bocagii* Peters
Myotis bocagii cupreolus	*Myotis bocagii cupreolus* Thomas
Myotis bocagii hildegardeae	*Myotis bocagii hildegardeae* Thomas
Pipistrellus nanus	*Pipistrellus nanus* Peters
Pipistrellus abaensis	*Pipistrellus nanus* Peters
Pipistrellus musciculus	*Pipistrellus nanulus* Thomas
Scotozous rüppelii	*Pipistrellus* (*Scotozous*) *rueppelli fuscipes* Thomas
Eptesicus tenuipinnis	*Eptesicus tenuipinnis* Peters
Eptesicus ater	*Eptesicus tenuipinnis ater* J. A. Allen
Eptesicus faradjius	*Eptesicus rendalli faradjius* J. A. Allen
Eptesicus minutus minutus	*Eptesicus pusillus* Leconte
Eptesicus garambae	*Eptesicus capensis garambae* J. A. Allen
Mimetillus moloneyi	*Mimetillus moloneyi moloneyi* Thomas
Scoteinus schlieffeni	*Scotoecus hirundo hindei* Thomas

Pachyotus altilis	*Scotophilus leucogaster leucogaster* Cretzschmar
Pachyotus nigrita nux	*Scotophilus nigrita nux* Thomas
Glauconycteris papilio	*Glauconycteris variegata papilio* Thomas
Glauconycteris humeralis	*Glauconycteris poensis* Gray
Glauconycteris alboguttatus	*Glauconycteris poensis* Gray
Miniopterus breyeri vicinior	*Miniopterus scheibersi vicinior* J. A. Allen
Miniopterus inflatus	*Miniopterus schreibersi villiersi* Aellen
Kerivoula cuprosa	*Kerivoula smithi* Thomas
Myopterus albatus	*Eomops albatus* Thomas
Nyctinomus ansorgei	*Tadarida* (*Tadarida*) *ansorgei* Thomas
Nyctinomus leonis	*Tadarida* (*Mops*) *leonis ochraceus* J. A. Allen
Nyctinomus cisturus	*Tadarida* (*Chaerephon*) *nigeriae* Thomas
Nyctinomus ochraceus	*Tadarida* (*Mops*) *leonis ochraceus* J. A. Allen
Chaerephon frater	*Tadarida* (*Chaerephon*) *pumila frater* J. A. Allen
Chaerephon russatus	*Tadarida* (*Chaerephon*) *russata* J. A. Allen
Chaerephon sp. indet.	*Tadarida* (*Chaerephon*) *aloysiisabaudiae* Festa
Chaerephon (*Lophomops*) *chapini*	*Tadarida* (*Chaerephon*) *chapini chapini* J. A. Allen
Chaerephon (*Lophomops*) *cristatus*	*Tadarida* (*Chaerephon*) *pumila frater* J. A. Allen
Chaerephon (*Lophomops*) *abae*	*Tadarida* (*Chaerephon*) *major* Trouessart
Mops midas	*Tadarida* (*Mops*) *midas* Sundevall
Mops congicus	*Tadarida* (*Mops*) *congicus congicus* J. A. Allen
Mops niangarae	*Tadarida* (*Mops*) *niangarae* J. A. Allen
Mops trevori	*Tadarida* (*Mops*) *congicus trevori* J. A. Allen
Mops (*Allomops*) *osborni*	*Tadarida* (*Mops*) *condylura osborni* J. A. Allen
Mops (*Allomops*) *occipitalis*	*Tadarida* (*Mops*) *thersites occipitalis* J. A. Allen
Mops (*Allomops*) *faradjius*	*Tadarida* (*Mops*) *demonstrator* Thomas
Mops (*Allomops*) *nanulus*	*Tadarida* (*Mops*) *nanulus* J. A. Allen

ADDITIONAL SPECIES OF CONGO BATS IN THE AMERICAN MUSEUM COLLECTIONS

Rousettus (*Rousettus*) *aegyptiacus:* There are six specimens of *R. a. leachi* from Kakondo, Katana, and Mai-ya-moto, all near the southwestern shore of Lake Kivu in Kivu Province.

Rousettus (*Stenonycteris*) *lanosus:* There are five specimens of *R. l. lanosus* from the Butagu Valley (western Ruwenzori), Lamera (8000 feet in western Kivu mountains), and Tschibati, all in Kivu Province.

Rousettus (*Lissonycteris*) *angolensis:* There are four specimens of *R. a. angolensis* from Mt. Hoyo in Kivu Province.

Epomophorus labiatus: There is a single specimen of *E. l. minor* from Kakondo in Kivu Province.

Megaloglossus woermanni: There is a single specimen from Lukolela in Equator Province.

Rhinolophus ruwenzorii: The type, described by J. Eric Hill (1942) from

Butagu Valley, Kivu Province, is the only specimen.

Pipistrellus anchietae: As mentioned above in the account of *P. nanus*, there are two specimens from Lubenge (Marungu Mountains) in Katanga Province.

Pipistrellus inexspectatus: Two specimens, a mother and a young, from Lukolela, Equator Province, are identified as this species after some hesitation. *Pipistrellus inexspectatus* was described by Aellen (1959) from Ngaouyanga in northern Cameroon. The two localities are about 600 miles apart and in different vegetation zones, Lukolela being in High Forest and Ngaouyanga in Guinea Savanna. Nevertheless, the Lukolela adult keys out to *inexspectatus* in Aellen's key and agrees very well with Aellen's diagnosis except for a less conspicuous white border to the wing, which in my experience is a rather unreliable character. In his key Aellen placed *inexspectatus* next to *anchietae* and *rusticus*. The Lukolela specimen (forearm, 31 mm.; condylobasal length, 12.1 mm.) is clearly distinct from either, the skull having a shorter, broader rostrum than either and being considerably larger than the skull of *rusticus*. If correctly identified, this is the first Congo record of *Pipistrellus inexspectatus*.

Eptesicus somalicus: One specimen from Lukolela, Equator Province, agrees well with this species as diagnosed by Rosevear (1962).

Eptesicus brunneus: A single specimen from Lukolela, Equator Province, is provisionally referred to this rare species. The specimen has a forearm length of 37 mm. and a condylobasal length of 12.7 mm. The Lukolela specimen agrees well with Thomas' original (1880) description and with my notes on the type except for its slightly larger size and more rounded tragus. The latter character may not be significant, since the ear of the Lukolela specimen is now somewhat shriveled. The large unicuspidate inner and reduced outer upper incisor are as Thomas describes. Thomas made no mention of the wing pigmentation, and this character unfortunately can no longer be determined on the type of *brunneus*. Hayman (*in* Sanderson, 1940) provisionally allocated some light-winged specimens from the Cameroons to *brunneus* but mentioned the fact that they disagree in having longer incisors. The Lukolela specimen is dark winged and differs considerably in skull characters from *rendalli* and *tenuipinnis* with which Hayman compared the Cameroon series. It therefore appears almost certain that the Lukolela specimen is specifically distinct from the ones from Cameroon. I am inclined to regard the Lukolela specimen as true *brunneus*. Possibly the Cameroon specimens are actually small, dark *rendalli*. If my concept of *E. brunneus* is correct, it is perhaps most like *E. bicolor*, but with a more heavily pigmented wing. It differs from the various forms of *E. capensis* by its higher braincase and hence more concave fore-

head. Originally described from Old Calabar in southeastern Nigeria, *E. brunneus* appears to be here recorded from the Congo for the first time.

Kerivoula phalaena: A single specimen from Lukolela, Equator Province, is placed here. The combination of a unicuspidate inner upper incisor, poorly developed interfemoral fringe, and very small size seems characteristic.

Eomops whitleyi: There are four specimens from Luluabourg, Kasai Province.

Xiphonycteris spurrelli: A single skin without a skull from Luluabourg, Kasai Province, is tentatively placed here.

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